

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 08-155806

(43)Date of publication of application : 18.06.1996

(51)Int.Cl.

B24B 9/14

G02C 1/02

(21)Application number : 06-307300

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(22)Date of filing : 12.12.1994

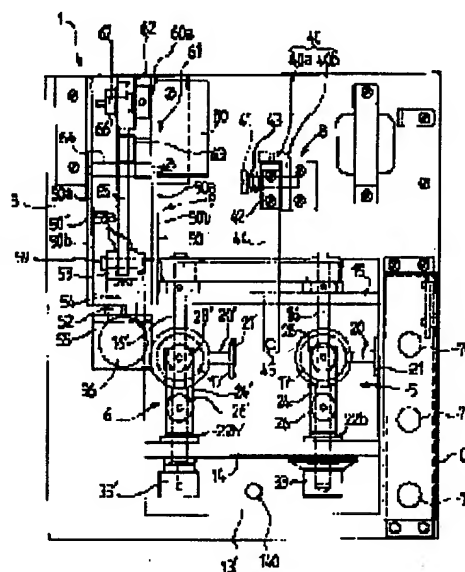
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## (54) PARTS FITTING HOLE BORING DEVICE FOR RIMLESS LENS

### (57)Abstract:

**PURPOSE:** To provide a rimless lens fastening hole boring device that can easily bore a parts fitting hole provided at the peripheral edge part of a rimless lens with the peripheral edge part ground in demonstration lens shape, in a right-angled direction to the contact plane of the refracting interface without needing skill.

**CONSTITUTION:** A parts fitting hole boring device for a rimless lens has a hole position detecting means 8 with a taper part to be engaged with the fitting hole of a demonstration lens, a lens holding means 6 tilted in the same condition as a demonstration lens holding means 5 interlockingly with the demonstration lens holding means 5, a hole machining means 9 for boring a parts fitting hole in the specified position of the peripheral edge part of a rimless lens held by the lens holding means 6, and an X-Y table for relatively moving the hole machining means 9 and the hole position detecting means 8 integrally in relation to the lens holding means 6 in a direction along a plane intersecting the boring axis of the hole machining means 9.



## LEGAL STATUS

[Date of request for examination]

05.12.2001

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

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**CLAIMS**

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[Claim(s)]

[Claim 1] Attachment punching equipment for the component mounting of the rim loess lens characterized by providing the following. A demonstration lens maintenance means by which the attaching hole for component mounting was prepared possible [ maintenance of the demonstration lens prepared in the periphery section ]. A lens maintenance means to make the right-and-left eye of the demonstration lens held by the aforementioned demonstration lens maintenance means correspond, and to hold the rim loess lens after a grinding process. The hole processing means for making the attaching hole for component mounting in the predetermined position of the periphery section of the rim loess lens after the grinding process held at the aforementioned lens maintenance means. The slope regulation means which carries out slope regulation of the rim loess lens after the grinding process held at the aforementioned lens maintenance means by carrying out slope regulation of the demonstration lens held at the aforementioned demonstration lens maintenance means to the aforementioned punching axis.

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the attachment punching equipment for the component mounting of the rim loess lens for making the attaching hole (hole for lens stops) for component mounting, such as a bridge and a temple (ear credit), in the periphery section of a rim loess lens.

[0002]

[Description of the Prior Art] Generally, with the rim loess glasses using the rim loess lens which consists of plastics etc., the rim loess lens of these right and left is combined on the bridge by arranging between the rim loess lenses of right and left of the bridge where the attached section (lens stop) was prepared in both ends at one, and fixing to the rim loess lens of right and left of the lens stop of the both ends of this bridge with a screw. moreover — these rim loess glasses — the bridge of each rim loess lens — the marginal part of an opposite side — temple attachment — public funds — an implement (lens stop) is fixed with a screw and it usually appears in this lens stop to have attached the temple (ear credit) through a ginglymus

[0003] the rim loess lens of the right and left by which grinding was carried out to this appearance by carrying out after carrying out the grinding process of the raw lens to the configuration of a demonstration lens with the lens edger and considering as a rim loess lens, when these rim loess glasses are manufactured — a bridge and temple attachment — public funds — the attaching hole for attaching parts, such as an implement, is made, respectively

[0004] And before making this attaching hole, the rim loess lens by which the grinding process was carried out to the flat demonstration lens with which the attaching hole was prepared was piled up, the nose of cam of a marker was inserted in the attaching hole of a demonstration lens, and the mark (mark) of the drilling position of an attaching hole is put on the rim loess lens. Then, the spectacles engineer who became skillful in the portion of the mark of this rim loess lens had made the attaching hole (hole for lens stops).

[0005]

[Problem(s) to be Solved by the Invention] By the way, when making this attaching hole in the predetermined position of the periphery section of a rim loess lens, since the refracting interface of a rim loess lens is curving, it needs to end right-angled to the tangential plane on the refracting interface of a rim loess lens on the relation of the part fixation with a screw.

[0006] However, it was very difficult to make a hole in the tangential plane on the refracting interface of a rim loess lens right-angled, and was that for which it cannot but depend on \*\*. And when a hole was made in the direction of slant to a tangential plane, it was the present condition to adjust the parts and ginglymi which have a lens stop, such as a bridge and temple fixing metal, and to make it a rim loess lens not separate.

[0007] Therefore, equipment which can make easily the attaching hole for the component mounting of a rim loess lens (hole for lens stops) right-angled to the tangential plane of a refracting interface was desired.

[0008] Then, the purpose of this invention is to offer the lens stop hole dawn equipment of the rim loess lens with which the periphery section can make easily the attaching hole for

component mounting prepared in the periphery section of the rim loess lens by which the grinding process was carried out to the demonstration lens configuration right-angled to the tangential plane of a refracting interface, without requiring skill.

[0009]

[Means for Solving the Problem] The demonstration lens maintenance means established by this invention possible [ maintenance of the demonstration lens with which the attaching hole for component mounting was prepared in the periphery section ] in order to attain this purpose, A lens maintenance means to make the right-and-left eye of the demonstration lens held by the aforementioned demonstration lens maintenance means correspond, and to hold the rim loess lens after a grinding process, By carrying out slope regulation of the demonstration lens held at the hole processing means for making the attaching hole for component mounting in the predetermined position of the periphery section of the rim loess lens after the grinding process held at the aforementioned lens maintenance means, and the aforementioned demonstration lens maintenance means It is characterized by considering as the attachment punching equipment for the component mounting of the rim loess lens which has the slope regulation means which carries out slope regulation of the rim loess lens after the grinding process held at the aforementioned lens maintenance means to the aforementioned punching axis.

[0010]

[Example] Next, one example of this invention is explained based on a drawing.

[0011] The attachment punching equipment for the component mounting of the rim loess lens concerning this invention is equipped with the mark attachment equipment 2 indicated to be the main part 1 of punching equipment shown in drawing 1 - drawing 6 to drawing 7 - drawing 10 .

[0012] <Main part 1 of punching equipment> this main part 1 of punching equipment The base plate 3 shown in drawing 1 - drawing 3 , and X-Y table 4 as a move means with which it was equipped like drawing 3 on the base plate 3, The demonstration lens maintenance means 5 and the lens maintenance means 6 with which it equipped on X-Y table 4, A maintenance means linkage means 7 to carry out synchronous linkage of this demonstration lens maintenance means 5 and the lens maintenance means 6, the hole position detection means 8 which was made to approach X-Y table 4 and was arranged on the base plate 3, and the hole processing means 9, It has the control box C which was located in the method of right-hand side of X-Y table 3 in drawing 1 , and was formed on the base plate 3.

[0013] The guide rails 10 and 10 fixed towards right and left among drawing on the base plate 3 as X-Y table 4 was shown in drawing 3 and drawing 4 , (X-Y table 4) The X table 11 with which guide rails 10 and 10 were equipped possible [ attitude movement right and left (the direction of X) ], It has the guide rails 12 and 12 fixed towards the vertical-among drawing direction (the direction of Y), i.e., a cross direction, on the X table 11, a guide rail 12, and the Y table 13 with which it was equipped possible [ attitude movement ] towards the vertical direction (the direction of Y) on 12.

[0014] On this Y table 13, drawing 1 and the retaining walls 14 and 15 prolonged in right and left (the direction of X) among drawing 4 are being fixed. These retaining walls 14 and 15 set an interval in the direction (cross direction) of Y, and are arranged in it in parallel. This retaining wall 14, the demonstration lens maintenance means 5 mentioned above among 15, and the lens maintenance means 6 are held.

[0015] (Demonstration lens maintenance means 5) This demonstration lens maintenance means 5 The operation shaft 16 held penetrate retaining walls 14 and 15 and free [ the rotation to retaining walls 14 and 15 ], The pillar object 17 which the operation shaft 16 penetrated the center of a peripheral surface, and was held in the center of this operation shaft 16, It has the positioning flange 21 prepared in the free edge of the pads 18 and 19 (elastic friction attachment component) which consist of rubber, synthetic resin, etc. fixed to the ends side of this pillar object 17, the support shaft 20 fixed in the center of a peripheral surface of the pillar object 17 by intersecting perpendicularly with the operation shaft 16, and the support shaft 20. The positioning lines 18a and 19a as shown in drawing 6 (b) are given to the front face of these pads 18 and 19.

[0016] Moreover, the demonstration lens maintenance means 5 has the supporter material 22 of

the shape of a KO character held at the end section side of the operation shaft 16. This supporter material 22 has the pieces 22a and 22b of opposite prolonged towards the pillar object 17 side in parallel with the operation shaft 16.

[0017] Furthermore, the support arms 23 and 24 in which the demonstration lens maintenance means 5 was arranged in parallel in accordance with the operation shaft 16, The fixed screws 25 and 26 which penetrate the end section of the support arms 23 and 24, are screwed on the pieces 22a and 22b of opposite, and are fixing the support arms 23 and 24 to the pieces 22a and 22b of opposite, The clamp screws 27 and 28 screwed on the other end of the support arms 23 and 24 towards the operation shaft 16, It has the disks 29 and 30 held at the point of the clamp screws 27 and 28, and the pads 31 and 32 (elastic friction attachment component) which consisted of rubber, synthetic resin, etc. and fixed to the end face of disks 29 and 30.

[0018] In addition, 33 is the operation knob for slope regulation operation fixed to the end section of the operation shaft 16.

[0019] (Lens maintenance means 6) Since this lens maintenance means 6 also has composition the same as the demonstration lens maintenance means 5, the sign which gave " " to the sign used for the demonstration lens maintenance means 5 is given to the same member as this demonstration lens maintenance means 5, or a similar member, and the explanation is omitted.

[0020] (Maintenance means linkage means 7) This maintenance means linkage means 7 consists of timing belts 36 over which the operation shaft 16, the timing gears 34 and 35 fixed to the other end of 16', and timing gears 34 and 35 were built.

[0021] (Hole position detection means 8) This hole position detection means 8 has the support plate 40 by which erection fixation was carried out on the base plate 3, as shown in drawing 1 and drawing 2 . The flat-surface configuration is formed in the shape of L character from wall 40b to which this support plate 40 extends in wall 40a prolonged up and down among drawing 1 , and right and left. and the point of the support bolt 41 as a rotation support shaft was screwed on wall 40a, and it was shown in the support bolt 41 at drawing 2 — as — a side configuration — support of an abbreviation rectangle — the piece 42 is held possible [ rotation ]

[0022] this support — inclined plane 42a to which the margo inferior is caudad located in a piece 42 from the axis O of the support bolt 41 is formed in the superior-horn section by the side of wall 40a thereby — the state of drawing 2 — support — end-face 42b of a piece 42 — wall 40a — contacting — support — although a piece 42 cannot rotate counterclockwise, it can rotate in the direction of a clockwise rotation

[0023] moreover, this support — between the piece 42 and the support bolt 41, the torsion spring 43 wound around the support bolt 41 is infixed this torsion spring 43 — support — a piece 42 — the direction of the counterclockwise rotation in drawing 2 — rotation energization — carrying out — support — the end face of a piece 42 is made to contact wall 40a

[0024] this support — the support plate 44 prolonged in the direction of Y towards the upper part of X-Y table 4 is fixed to the upper surface of a piece 42, and the taper-like hole engagement child 45 is being fixed to the free edge inferior surface of tongue of a support plate 44

[0025] (Hole processing means 9) This hole processing means 9 has the frame board 50 of the couple fixed on the base plate 3, and 50', as shown in drawing 1 . The side configuration is formed in inverse L-shaped from horizontal-level 50b to which this frame board 50 and 50' extend in the direction of Y in an X-Y table 4 side from the upper limit of perpendicular section 50a and perpendicular section 50a.

[0026] Between the points of these horizontal levels 50b and 50b, the guide plate 51 prolonged up and down is fixed, the long holes 51a and 51a of the couple which sets an interval up and down and is prolonged up and down are formed in this guide plate 51, and the rise-and-fall plates 52 and 53 are arranged in both-sides side of this guide plate 51. the bolts 54 and 54 with which these rise-and-fall plates 52 and 53 penetrated the rise-and-fall plate 53 and long holes 51a and 51a, and the point was screwed on the rise-and-fall plate 52 — it is — mutual — one — and along with the guide plate 51, it is combined possible [ rise and fall ]

[0027] The L character-like susceptor 55 is fixed to the rise-and-fall plate 52, the motor 56 for a drill drive is fixed on a susceptor 55, the drill chuck 57 for drill maintenance is held at the soffit

section of rotation output-shaft 56a (main shaft) of a motor 56, and the drill 58 is held removable at this drill chuck 57. In addition, Salients 53a and 53a protrude in the center of a tooth back of the rise-and-fall plate 53, and the engagement pin 59 is held between this salient 53a and 53a. [0028] The frame board 50 is located in the up superficies of perpendicular section 50a, and the driving gear 60 is being fixed to it on screws 61 and 61. the gear reduction gear interlocked with the motor which does not illustrate this driving gear 60, and this motor — having — output-shaft 60a of this gear reduction gear — the frame board 50 — penetrating — the frame board 50 and 50' — it is arranged in between

[0029] The disc-like cam 62 is formed in this output-shaft 60a at one at the same axle, notch 62a for position detection is formed in the peripheral surface of a cam 62, the inside of the frame board 50 is approached at a cam 62, and the microswitch 63 is being fixed. This microswitch 63 has actuator lever 63a, and engagement roller 63b prepared in the point of this actuator lever 63a is made to \*\*\*\* it to the peripheral surface of a cam 62.

[0030] Both-ends maintenance of the frame board 50 and the support shaft 64 which located the upper part in 50' is carried out, and the pars intermedia of the drive lever 65 of a tabular is held free [ rotation ] at this support shaft 64. Engagement notch 65a of the shape of a slit opened at a nose of cam is formed in the end section of this drive lever 65, and the engagement pin 59 is made to engage with this engagement notch 65a.

[0031] Moreover, the link board 66 upper-limit section is held free [ rotation ] through a pivot 67 at the other end of the drive lever 65, and the pivot 68 attached in the position (periphery section) as for which the side of the cam board 62 carried out eccentricity is held free [ rotation ] at the soffit section of this link board 66. In addition, while roller 63b of a microswitch 63 is engaging with notch 62a of a cam 62, the rise-and-fall plates 52 and 53 and the drill 58 which goes up and down to one are located by the top dead center.

[0032] ((C) Control box) The electric power switch 70, the inversion switch 71, and the start switch 72 are formed in this control box C.

[0033] If this electric power switch 70 is made to turn on, the control circuit which is not illustrated will be operated. In this state, if this control circuit makes the start switch 72 turn on, while it will operate a motor 56, will carry out the rotation drive of the rotation output-shaft 56a and will rotate a drill 58, it operates a driving gear 60 and right-rotates output-shaft 60a. By making a cam 62 make one revolution, and carrying out a variation rate caudad with this rotation, after the link board 66 makes the upper part carry out the variation rate of the right end section of the drive lever 65 among drawing 2 , after the left end section of the drive lever 65 is dropped, it is raised. Under the present circumstances, it is raised after the rise-and-fall plates 52 and 53 are dropped by a motor 56 and a drill 58, and one by the drive lever 65.

[0034] And if engagement roller 63b of a microswitch 63 is made to engage with notch 62a of a cam 62 at the same time a drill 58 is made to carry out a variation rate to a top dead center, a microswitch 63 will detect this position (initial valve position), and will output a detection signal. This detection signal is inputted into a control circuit, and a control circuit will stop the operation of a motor 56 and a driving gear 60, if this detection signal is received.

[0035] Moreover, if the inversion switch 71 makes a control circuit turn on, after it will stop the operation of a driving gear 60 while this drill 58 being dropped, it carries out the inversion operation of the driving gear 60, makes output-shaft 60a rotate reversely, raises the rise-and-fall plates 52 and 53, a motor 56, and a drill 58 to a top dead center (initial valve position), and stops the operation of a motor 56 and a driving gear 60.

[0036] <Mark attachment equipment 2> This mark attachment equipment 2 has support sense doubling equipment 110 of the lens with an adhesive disk by which grinding was carried out to the means for supporting 80 which support a demonstration lens, and the marker maintenance means 100.

[0037] Means for supporting 80 have the supporter 83 of the guide plate 82 fixed to L character-like the support plate 81 and this support plate 81, and the couple with which transverse-plane 82a of a guide plate 82 was equipped.

[0038] This supporter 83 has plinth 83a, the pad tie-down plate 84, and a support plate 85, and this plinth 83a, the pad tie-down plate 84, and the support plate 85 are being fixed to

transverse-plane 82a of a guide plate 82 with the bolt 86 in this order. the pad which this plinth 83a is prepared lower than the upper surface of a guide plate 82, and becomes the upper-limit section transverse plane of the pad tie-down plate 84 from rubber, synthetic resin, etc. — the member 87 has fixed

[0039] moreover, a support plate 85 is made to project at the front of a guide plate 82 horizontally — having — \*\*\*\* — this support plate 85 — L character-like maintenance — a piece 88 is held possible [ movement to a longitudinal direction ], and the spring carrier pin 89 fixes to the base inferior surface of tongue of a support plate 85 — having — maintenance — the coil spring (energization means) 90 is infixed between spring engagement section 88a of a piece 88, and the spring carrier pin 89 91 counters a pad 87 — making — maintenance — the pad member which consists of rubber, synthetic resin, etc. which fixed to perpendicular section 88b of a piece 88, and 92 are the scales formed in the upper surface of a support plate 85

[0040] the slide with which engagement slot 101a which makes the marker maintenance means 100 engage with a guide plate 82 was prepared — a member 101 and a slide — it has the supporter material 103 of the shape of L character held possible [ vertical movement ] at the guide plate 102 fixed to the member 101, and the guide plate 102

[0041] this supporter material 103 — the clamp screw 104 — minding — spring attachment — a member 105 holds possible [ level rotation ] — having — this spring attachment — to the member 105, the end face section of the flat spring 106,107 of a couple has fixed Marker attaching part 106a by which the shape of V character was bent is formed in the point of this flat spring 106, and the marker 108 is held removable between flat springs 106,107 by pushing against marker attaching part 106a the marker 108 made to engage with this marker attaching part 106a by the flat spring 107.

[0042] the slide with which engagement slot 111a which makes support sense doubling equipment 110 engage with a guide plate 82 was prepared — a member 111 and this slide — the direction which penetrates a member 111 and intersects perpendicularly with engagement slot 111a — a slide — possible — a slide — it has the engagement board 112 held at the member 111 And engagement presser-foot-stitch-tongue 112a which turned to the point of this engagement board 112 caudad, and was bent perpendicularly is prepared.

[0043] In addition, the Y table 13 is equipped with the fixed screw 140 which fixes this Y table 13 to the X table 11.

[0044] Next, an operation of the attachment punching equipment for the component mounting of the rim loess lens of such composition is explained.

[0045] (1) In the glasses 120 for a demonstration as shown in marking drawing 7 of position decision, a bridge 122 is arranged between the demonstration lenses 121,121 of a lens configuration, and the lens stops 122a and 122a formed in the both ends of this bridge 122 are being fixed to the opposite marginal part of the demonstration lens 121,121 on the screw 123,123. moreover, the bridge 122 of the marginal part of the demonstration lens 121 — the portion of an opposite side — temple attachment — public funds — an implement (lens stop) 124 is fixed on a screw 125 — having — temple attachment — public funds — the temple (ear credit) 126 is attached in the implement 124 through the ginglymus 127 In addition, the demonstration lens 121 is curving in the direction of three dimensions in the lens configuration.

[0046] by the way, maintenance — the spring force of a coil spring 90 is resisted and a piece 88 is moved to the nose-of-cam side of a support plate 85 — making — a pad — the maintenance after extending the interval of members 87 and 91 and laying the demonstration lens 121,121 of right and left of the glasses 120 for a demonstration on the support plate 85 of the couple of means for supporting 80 — a piece 88 — detaching — a pad — the demonstration lens 121 is made to pinch between a member 87 and 91

[0047] next, a slide — while making engagement slot 101a of a member 101 engage with a guide plate 82 — the clamp screw 104 — loosening — spring attachment — carrying out level rotation of the member 105 — the point of a marker 108 — the center of screws 123 or 125 — doubling — the clamp screw 104 — binding tight — spring attachment — a member 105 is fixed

[0048] in this state, the upper surface of the demonstration lens 121 is contacted in the nose of cam of a marker 108 — making — a slide — a positioning line is drawn on the demonstration



lens 121,121 on either side by moving a member 101 along with a guide plate 82 It keeps fixed, without loosening the clamp screw 104 of the marker maintenance means 100, after finishing drawing this positioning line on the demonstration lens 121,121 on either side.

[0049] On the other hand, the grinding of the periphery section of a ground lens (lens plate) is carried out to the configuration of the demonstration lens 121 of the glasses 120 for a demonstration with the lens edger (lens grinding attachment) which is not illustrated, and it considers as the rim loess lens 130 as shown in drawing 10 . The adhesive disk 131 for making the rim loess lens 130 hold to the lens axis of rotation of a lens edger on the occasion of grinding adsorbs, this lens 130, i.e., rim loess lens, by which grinding was carried out.

[0050] Cup-like object 131b set to circular metal base 131a from rubber, synthetic resin, etc. was prepared in one, and the axial center is made in agreement by this adhesive disk 131 focusing on the optics of the rim loess lens 130. Moreover, in case an adhesive disk 131 is made to hold to the lens axis of rotation of a lens edger, positioning slot 131c for carrying out positioning maintenance to this lens axis of rotation is formed in metal base 131a of this adhesive disk 131.

[0051] such the lens 130 with an adhesive disk, i.e., a rim loess lens, — the support-plate 85 top of the couple of means for supporting 80 — laying — a pad — the demonstration lens 121 is made to pinch between a member 87 and 91

[0052] Next, the installation state over the support plate 82 of the rim loess lens 130 is adjusted using support sense doubling equipment 110. namely, a slide — while making engagement slot 111a of a member 111 engage with a guide plate 82, it is made to engage with positioning slot 131c which prepared engagement presser-foot-stitch-tongue 112a prepared in the engagement board 112 in metal base 131a of an adhesive disk 131, and positioning slot 131c and a guide plate 82 are made parallel

[0053] then, the slide of the marker [ having fixed the clamp screw 104 ] maintenance means 100 — engagement slot 101a of a member 101 is made to engage with a guide plate 82

[0054] in this state, the upper surface of the rim loess lens 130 is contacted in the nose of cam of a marker 108 — making — a slide — the straight line for alignment is drawn on the rim loess lens 130 by moving a member 101 along with a guide plate 82 This work is done about a rim loess lens on either side.

[0055] (2) Make the right-hand side demonstration lens 121 contact a pad 18, and while doubling the positioning line given to the demonstration lens 121 with positioning line 18a given to this pad 18, make the demonstration lens 121 contact the positioning flange 21, where it loosened the mounting hole processing (demonstration lens maintenance) clamp screw 27 and the interval between a pad 18 and 29 is extended greatly. In this state, the fixed screw 25 is bolted, the clamp screw 27 is bolted, and pinching fixation of the right-hand side demonstration lens 121 is carried out between a pad 18 and 29.

[0056] In addition, on the occasion of alignment with this demonstration lens 121 and pad 18, the fixed screw 25 can be operated, rotation operation of the support arm 23 can be carried out, and a pad 29 can also be shifted from a pad 18 to the side. Moreover, among drawing, although sense differed, the left-hand side thing and the right-hand side thing added (L) to the left-hand side demonstration lens 121, added (R) and explained the demonstration lens 121 to the right-hand side demonstration lens 121 while it attached the sign of explanation same for convenience.

[0057] The left-hand side demonstration lens 121 is made similarly to pinch between a pad 19 and 30. in addition, pinching of this demonstration lens 121 — facing — the bridge 122 of the glasses 120 for a demonstration, and temple attachment — public funds — an implement 124 shall be beforehand removed from the demonstration lens 121,121

[0058] (Lens maintenance) the rim loess lens 130,130 of the left where the grinding process of the periphery section was carried out on the other hand, and the right to the adhesive disk 131 — removing — the rim loess lens 130,130 of this left and the right — pad 18' of the lens maintenance means 6, and 29' — between and 19', and 30' — it is made to hold in between In addition, among drawing, although sense differed, the left-hand side thing and the right-hand side thing added (L) to the left-hand side lens 130, added (R) and explained the rim loess lens 130 to the right-hand side lens 130 while it attached the sign of explanation same for convenience.

[0059] (Punching processing) next, the mounting hole which has held retaining walls 14 or 15 by the hand of another side, carried out move operation of the demonstration lens maintenance means 5 and the lens maintenance means 6 in one all around, and was prepared in the demonstration lens 121 while resisting the spring force of the torsion spring 43 in a support plate 44 by one of the two's hand and making the upper part carry out a variation rate — the hole engagement child 45 of the point of a support plate 44 — caudad — doubling . Movement of the demonstration lens maintenance means 5 in this case and the lens maintenance means 6 is performed by operation of X-Y table 4.

[0060] And release one's hold of a support plate 44, and the hole engagement child 45 is made to engage with the mounting hole of the demonstration lens 121 according to the spring force of the torsion spring 43. Furthermore, by carrying out rotation operation of the operation knob 33 for slope regulation, and carrying out rotation operation of the operation shaft 16, holding retaining walls 14 or 15 and carrying out jogging operation of the demonstration lens maintenance means 5 and the lens maintenance means 6 in one all around The hole engagement child's 45 taper side is made to engage with the marginal part of the mounting hole of the demonstration lens 121 over a perimeter.

[0061] Rotation operation of this operation shaft 16 is transmitted to operation shaft 16' through the maintenance means linkage means 7, i.e., timing gears 34 and 35 and a timing belt 36, and the periphery section of the rim loess lens 130 held at the lens maintenance means 6 of operation shaft 16' is made to interlock and tilt it to tilting operation of the periphery section of the demonstration lens 121. Under the present circumstances, the inclination state of the periphery section of the rim loess lens 130 and the periphery section of the demonstration lens 121 will be in the same state.

[0062] While the tangential plane which passes along the point that the front face of this demonstration lens 121 and the center line of mounting hole 121a cross by this state while the center line of mounting hole 121a of the demonstration lens 121 and the hole engagement child's 45 axis are in agreement becomes an abbreviation horizontal, the hole engagement child's 45 axis is made to intersect perpendicularly to this tangential plane.

[0063] If an electric power switch 70 is made to turn on, a control circuit (not shown) will operate in this position. In this state, if a control circuit makes the start switch 72 turn on, while it will operate a motor 56, will carry out the rotation drive of the rotation output-shaft 56a and will rotate a drill 58, it operates a driving gear 60 and right-rotates output-shaft 60a.

[0064] When a cam 62 is rotated and the link board 66 makes the upper part carry out the variation rate of the right end section of the drive lever 65 among drawing 2 with this rotation, the left end section of the drive lever 65 is dropped. Under the present circumstances, the rise-and-fall plates 52 and 53 are dropped by a motor 56 and a drill 58, and one by the drive lever 65, and a drill 58 drills a mounting hole in the periphery section of the rim loess lens 130.

[0065] The drilling position to the rim loess lens 130 of this mounting hole turns into a position corresponding to the position of a mounting hole established in the demonstration lens 121 of the same configuration as this rim loess lens 130. And the axis of this drill 58 becomes perpendicular to the tangential plane which passes along the point that the nose of cam of a drill 58 touches the outside surface of the rim loess lens 130. In addition, this tangential plane serves as an abbreviation horizontal.

[0066] And a cam 62 is rotated further, and among drawing 2 , if the link board 66 carries out the variation rate of the right end section of the drive lever 65 to a lower part, the left end section of the drive lever 65 will be raised. Under the present circumstances, the rise-and-fall plates 52 and 53 are raised by a motor 56 and a drill 58, and one by the drive lever 65, and it is raised after a drill 58 deserts the rim loess lens 130. If engagement roller 63b of a microswitch 63 is made to engage with notch 62a of a cam 62 at the same time a drill 58 is made to carry out a variation rate to a top dead center with this rise, a microswitch 63 will detect this position (initial valve position), and will output a detection signal. This detection signal is inputted into a control circuit, and a control circuit will stop the operation of a motor 56 and a driving gear 60, if this detection signal is received.

[0067] Moreover, when he has noticed alignment being imperfect immediately after making th

start switch 72 mentioned above turn on, the inversion switch 71 is made to turn on. Thereby, after it stops the operation of a driving gear 60 while this drill 58 being dropped to the control circuit, it carries out the inversion operation of the driving gear 60, makes output-shaft 60a rotate reversely, raises the rise-and-fall plates 52 and 53, a motor 56, and a drill 58 to a top dead center (initial valve position), and stops the operation of a motor 56 and a driving gear 60. [0068]

[Effect] The demonstration lens maintenance means established by this invention possible [ maintenance of the demonstration lens with which the attaching hole for component mounting was prepared in the periphery section ] as explained above, A lens maintenance means to make the right-and-left eye of the demonstration lens held by the aforementioned demonstration lens maintenance means correspond, and to hold the rim loess lens after a grinding process, By carrying out slope regulation of the demonstration lens held at the hole processing means for making the attaching hole for component mounting in the predetermined position of the periphery section of the rim loess lens after the grinding process held at the aforementioned lens maintenance means, and the aforementioned demonstration lens maintenance means Since it considered as the composition which has the slope regulation means which carries out slope regulation of the rim loess lens after the grinding process held at the aforementioned lens maintenance means to the aforementioned punching axis The periphery section can make easily the attaching hole for component mounting prepared in the periphery section of the rim loess lens by which the grinding process was carried out to the demonstration lens configuration right-angled to the tangential plane of a refracting interface, without requiring skill.

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[Translation done.]

**\* NOTICES \***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. \*\*\*\* shows the word which can not be translated.

3. In the drawings, any words are not translated.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

[Drawing 1] It is the plan of the lens stop hole down equipment of the rim loess lens concerning this invention.

[Drawing 2] Outline explanatory drawing in which (a) looked at some equipments of drawing 1 from the side, and (b) are important section explanatory drawings of the cam shown in (a).

[Drawing 3] While fracturing partially the equipment shown in drawing 1, it is explanatory drawing which looked at the part from the transverse plane.

[Drawing 4] It is the perspective diagram of the lens shown in drawing 1, and a demonstration lens attaching part.

[Drawing 5] It is explanatory drawing of a demonstration lens attaching part shown in drawing 4.

[Drawing 6] Operation explanatory drawing of the equipment which (a) requires for this invention, and (b) are \*\*\*\*\* of the pad shown in (a).

[Drawing 7] It is the perspective diagram of the mark attachment equipment used for the lens stop hole down equipment of the rim loess lens concerning this invention.

[Drawing 8] It is the plan of the means for supporting which are some mark attachment equipments shown in drawing 7.

[Drawing 9] It is operation explanatory drawing of the mark attachment equipment shown in drawing 7.

[Drawing 10] It is operation explanatory drawing of the equipment which determines the sense of the rim loess lens which the means for supporting shown in drawing 7 are made to support.

**[Description of Notations]**

121 — Demonstration lens

5 — Demonstration lens maintenance means

8 — Hole position detection means

130 — Rim loess lens

6 — Lens maintenance means

9 — Hole processing means

4 — X-Y table (move means)

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[Translation done.]

**\* NOTICES \***

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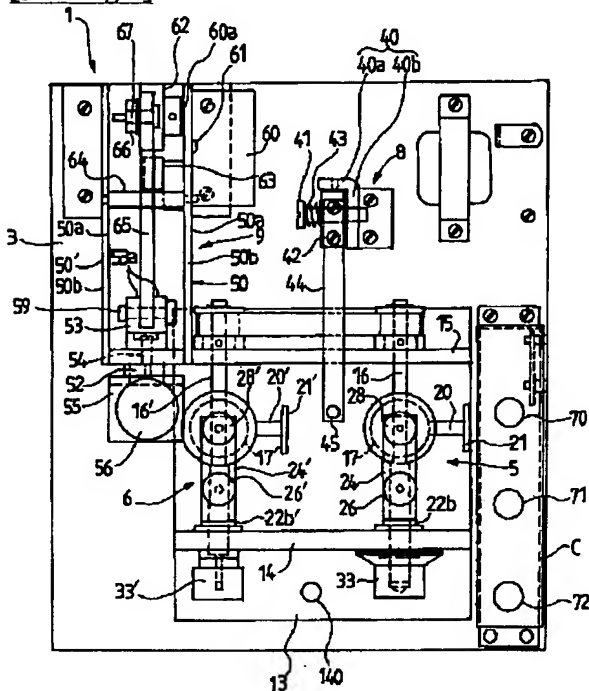
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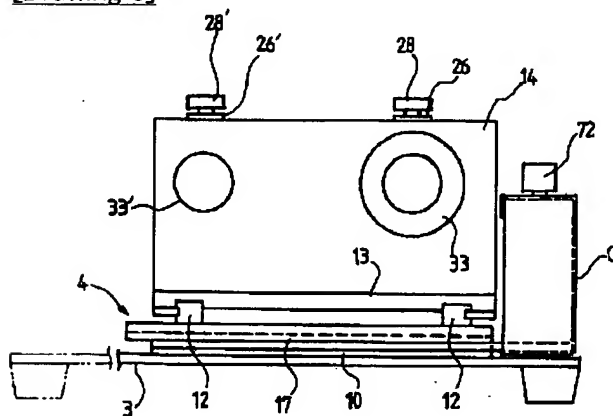
**DRAWINGS**

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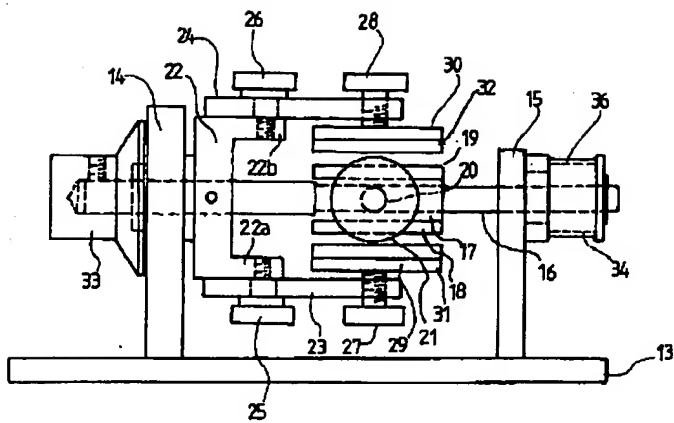
**[Drawing 1]**



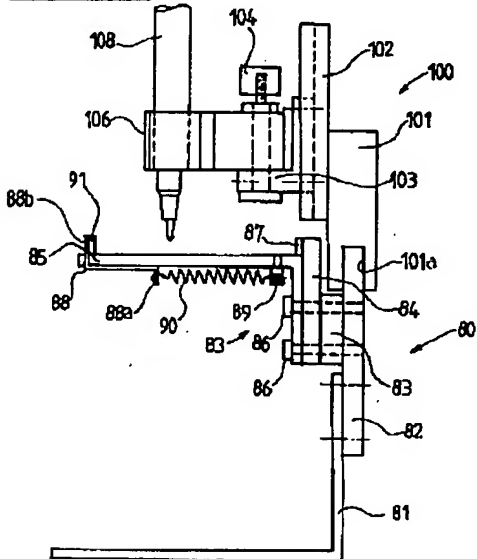
**[Drawing 3]**



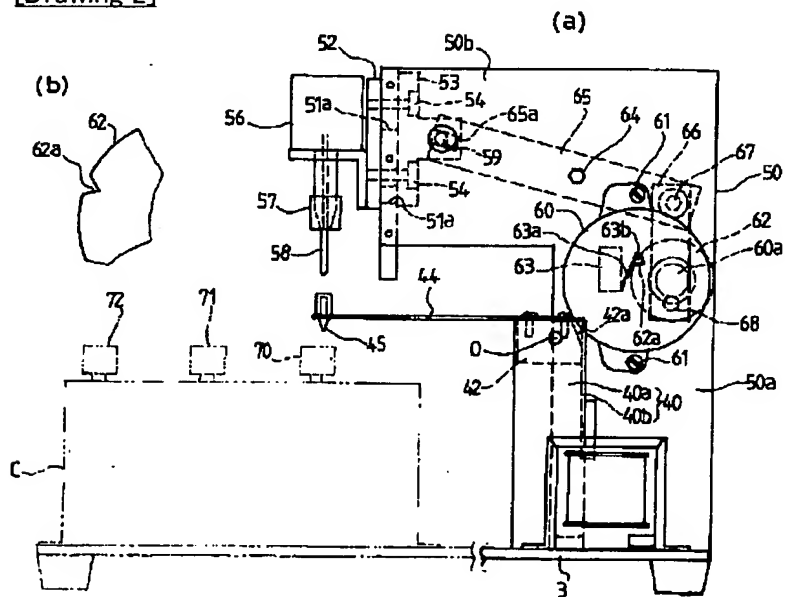
**[Drawing 5]**



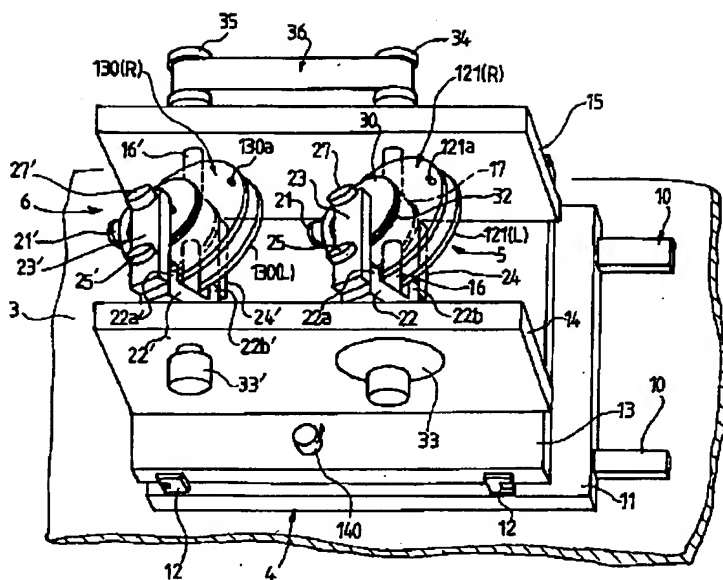
[Drawing 9]



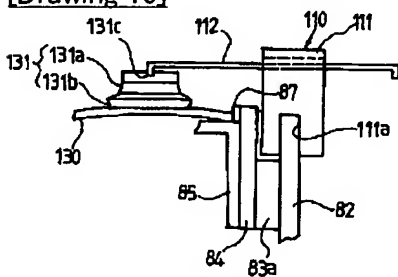
[Drawing 2]



[Drawing 4]

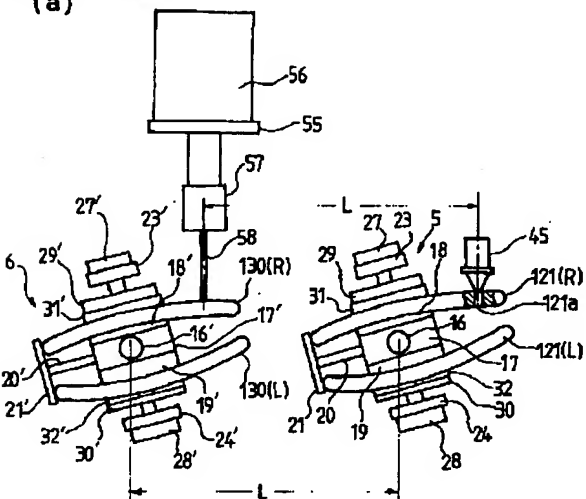


[Drawing 10]

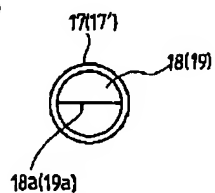


[Drawing 6]

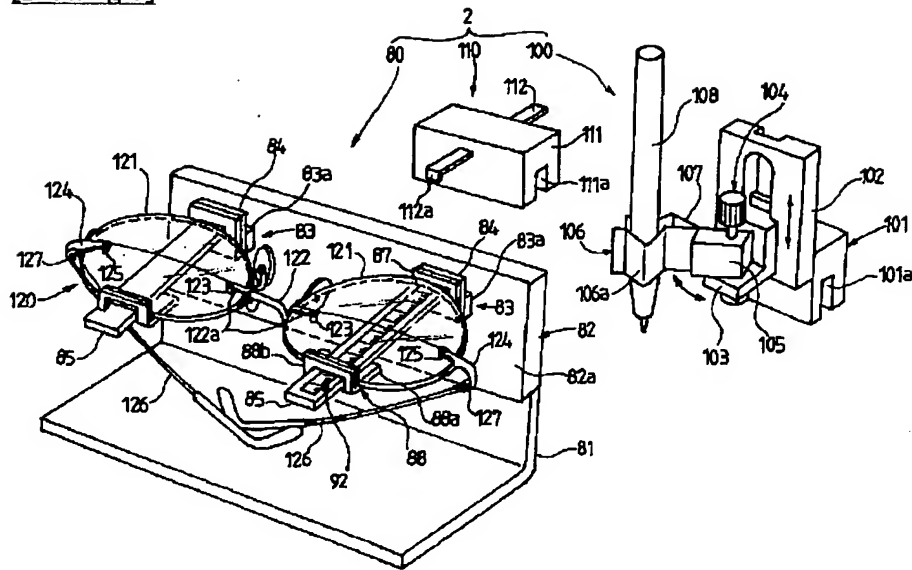
(a)



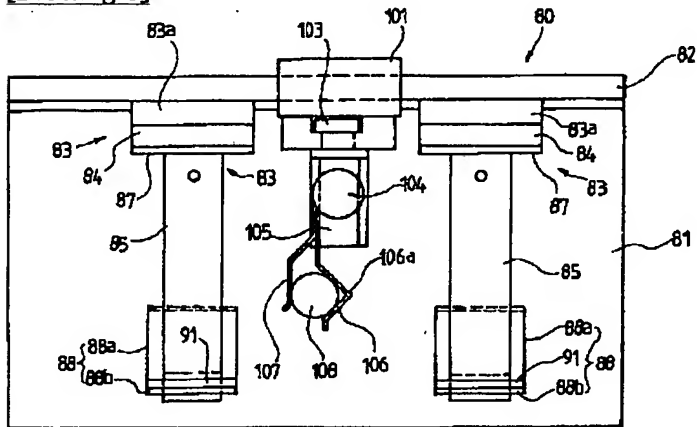
(b)



[Drawing 7]



[Drawing 8]



[Translation done.]